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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/711,533

09/24/2004

Jing-Hong Gau

13791-US-PA

5532

31561

7590

12/05/2005

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE

7 FLOOR-1, NO. 100

ROOSEVELT ROAD, SECTION 2

TAIPEI, 100

TAIWAN

EXAMINER

TOBERGTE, NICHOLAS J

ART UNIT

PAPER NUMBER

2823

DATE MAILED: 12/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/711,533	Applicant(s) GAU, JING-HORNG	
	Examiner Nicholas J. Tobergte	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-25 is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

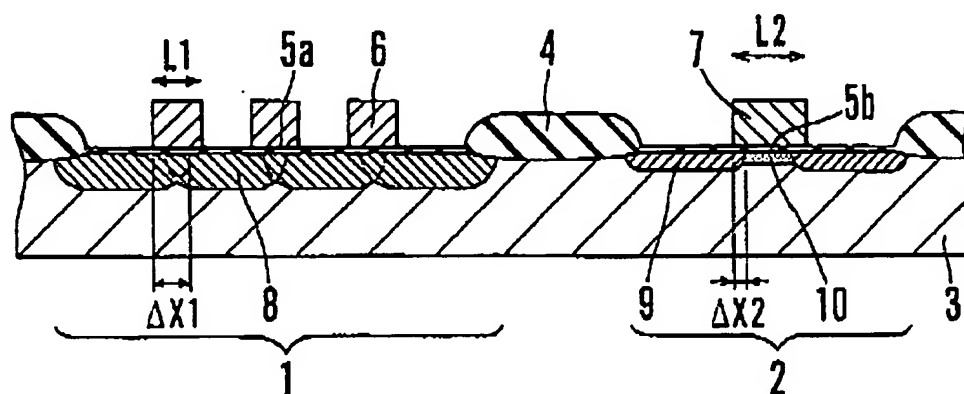
Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kasai et al (US 6,190,987).

Pertaining to claim 1, Kasai teaches a method of fabricating a capacitor, comprising:

Forming a dielectric layer **5a** on a semiconductor substrate **3**;

Forming an upper electrode **6** on the dielectric layer **5a**, the upper electrode having a plurality of opening therein **See Fig 7D**; and

Performing a doping step to the substrate through the openings to form a single doped region **15** as a lower electrode **8** in the substrate **3** under the upper electrode **6** **See Fig 7D**.



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Pertaining to claim 2, Kasai teaches the method of claim 1, wherein the doping step comprises a tilt ion implantation process **Col 5 lines 45-55**.

Pertaining to claim 3, Kasai teaches the method of claim 1, wherein the doping step comprises:

Conducting a substantially vertical ion implantation process to form a plurality of doped regions in the substrate under the openings **Col 8 lines 16-21**; and

Conducting an annealing process to make the doped regions merge into the single doped region **Col 8 lines 21-39**.

Pertaining to claim 4, Kasai teaches the method of claim 1, wherein the step of forming the upper electrode on the dielectric layer comprises:

Forming a conductive layer on the dielectric layer **Col 8 lines 8-15**; and

Patterning the conductive layer into the upper electrode with a lithography process and an etching process **Col 8 lines 8-15**.

Pertaining to claim 5, Kasai teaches the method of claim 1, wherein the upper electrode includes a plurality of bar-like conductive layers connecting with each other, and the openings in the upper electrode are trench-like openings between the bar-like conductive layers. **See Fig 7D**

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Pertaining to claim 6, Kasai teaches the method of claim 5, wherein the upper electrode has a comb-like structure or a fishbone-like structure. **See Fig 8A**

Pertaining to claim 7, Kasai teaches the method of claim 1, wherein the upper electrode has a net-like structure. **See Fig 4A**

Allowable Subject Matter

Claims 8-25 are allowed. The reason for allowance is that it is not obvious to one of ordinary skill in the art to put down a metal silicide on the doped region in the openings of the conductive layer.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas J. Tobergte whose telephone number is 571-272-6006. The examiner can normally be reached on Mon - Thur 7am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

njt

A handwritten signature in black ink, consisting of a large, stylized 'W' followed by a cursive 'D' and 'C'.

**W. DAVID COLEMAN
PRIMARY EXAMINER**